

***Update on Revisions to the  
Delaware Sediment & Stormwater Regulations:  
Overview of Second Draft***

***Regulatory Advisory Committee Meeting  
May 27, 2010***

# 1.0 General Provisions

## 1.3 Effective Date

- Effective upon promulgation (1.3.1)
  - Consistent state-wide
- Previously approved projects valid for three years (1.3.2)
- Projects under construction subject to local sunset provisions (1.3.3)

# 1.5 Variances

- Revised variance provision
  - Refer to Chapter 60
  - Request to Department Secretary
  - Temporary variances also in accordance with Ch. 60 provisions

# 1.6 Fees and Financial Guarantees

- Fee Schedules subject to State and/or local public notice requirements (1.6.1.2.2)
- Financial Guarantee
  - Provisions set locally after required public notice (1.6.2.2)
  - Financial Guarantee details removed from regs
- Fee-in-lieu
  - Now Offset and Mitigation Programs (1.6.3)
  - Provisions set locally after required public notice (1.6.3.1)
  - Applicable for full or partial compliance with RPs

## 1.7 Legal Authority

- Promulgate regulations under both  
7 Del. C. Ch. 40 and 7 Del. C. Ch. 60
  - Allow for enforcement under both
  - Use Ch. 60 variance procedure

## 2.0 Definitions

- Adequate Conveyance
- Adverse Impact
- Applicant
- As-Built Plans → Post Construction Verification Documents
- Designated Watershed or Subwatershed *(from Law)*
- Detailed Plan

## 2.0 Definitions

- Effective Imperviousness
- Impervious Surface
- Inactive
- Licensed Professional in the State of Delaware
- Maintenance
- Maximum Extent Practicable

## 2.0 Definitions

- Mitigation Program
- Offset Program
- Owner
- Performance-Based Approach
- Redevelopment
- Runoff Reduction Practices
- Standards-Based Approach

## 2.0 Definitions

- Stormwater Management *(from Law)*
- Tidewater → Tidal Waters
- Variance
- Watershed Plan

# Deleted Definitions

- Emergency Project
- Extended Detention
- Extended Filtration
- Homeowners' Association
- Infill
- Pre-Application Meeting
- Stormwater Impact Study
- Unnecessary Hardship

## 3.0 Plan Approval Procedures and Requirements

## 3.0 Plan Approval Procedures and Requirements

- 3.1: Three Step Process
  - Step 1: project application meeting
  - Step 2: preliminary Sediment & Stormwater Management Plan
  - Step 3: Sediment & Stormwater Management Plan

## 3.2 Project Application Meeting

- Required step
- Stormwater Assessment Study (SAS)
  - Applicant submits site data including soils, hydrology, historic drainage problems, etc.
- Stormwater Assessment Report (SAR)
  - Results from project application meeting discussion

# Stormwater Assessment Report

DRAFT

## Stormwater Assessment Report

Project: \_\_\_\_\_

Owner/Developer: \_\_\_\_\_

Consultant: \_\_\_\_\_

<u>Assessment Item</u>	<u>Anticipated Engineering Effort</u>		
	<i>Minor</i>	<i>Moderate</i>	<i>Significant</i>
1. Soils - On-site soils have low permeability, high water table, or other limitations that could adversely affect adequate stormwater management for the proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Runoff Potential - Change in land cover due to removal of trees, increases in impervious cover, etc. could adversely affect adequate stormwater management for the proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Water Quality - Pollutant loadings associated with proposed project could adversely affect adequate stormwater management.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Sump Conditions - Existing topography of site creates depressional areas (closed 2' contours) where runoff tends to collect without direct discharge.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Discharge Points - Areas where stormwater runoff leaves the site have limitations due to low gradient, backwater effects, lack of a defined channel or other hydraulic limitations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Off-Site Drainage - Areas draining into the site could adversely affect adequate stormwater management for the proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Conveyance - Downstream conditions such as inadequate pipe or channel capacity could limit adequate drainage from the site.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Mitigation under consideration for "Significant" ratings:

- ☐ Over-management
- ☐ Off-site improvements
- ☐ Easement(s)

Reporting Agency: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Date of Pre-Application Meeting: \_\_\_\_\_

# Variance Request Review

- Section 3.6 deleted
- Chapter 60 procedure used for variance requests

## 3.7 Standard Plan Criteria

- Standard Plan project types
  - Less than 1 acre disturbance
  - Tax Ditch maintenance
  - Minor linear disturbances
  - Stormwater facility maintenance

## 3.7 Standard Plan Criteria

- Standard plans contain standard conditions for:
  - Construction site SWM
  - Post Construction SWM
- Methods for compliance in Technical Document

## 3.7 Standard Plan Criteria

- Standard Plan Categories with template plans
  - Ag Structures
  - Tax Ditch Maintenance
  - Others may be proposed

## 3.8 Plan Certifications

- Former language:
  - “qualified design professional”
- Revised language:
  - “licensed professional in the State of Delaware”

## 3.10 Operation & Maintenance Plan

- O&M Plan required
  - Entire stormwater management system
  - Submitted prior to project completion

## 3.11 Post Construction Verification Documents

- “As-Builts” submitted within 60 days of permanent SWM system completion
- Checklists to be included in Technical Document

# Easements

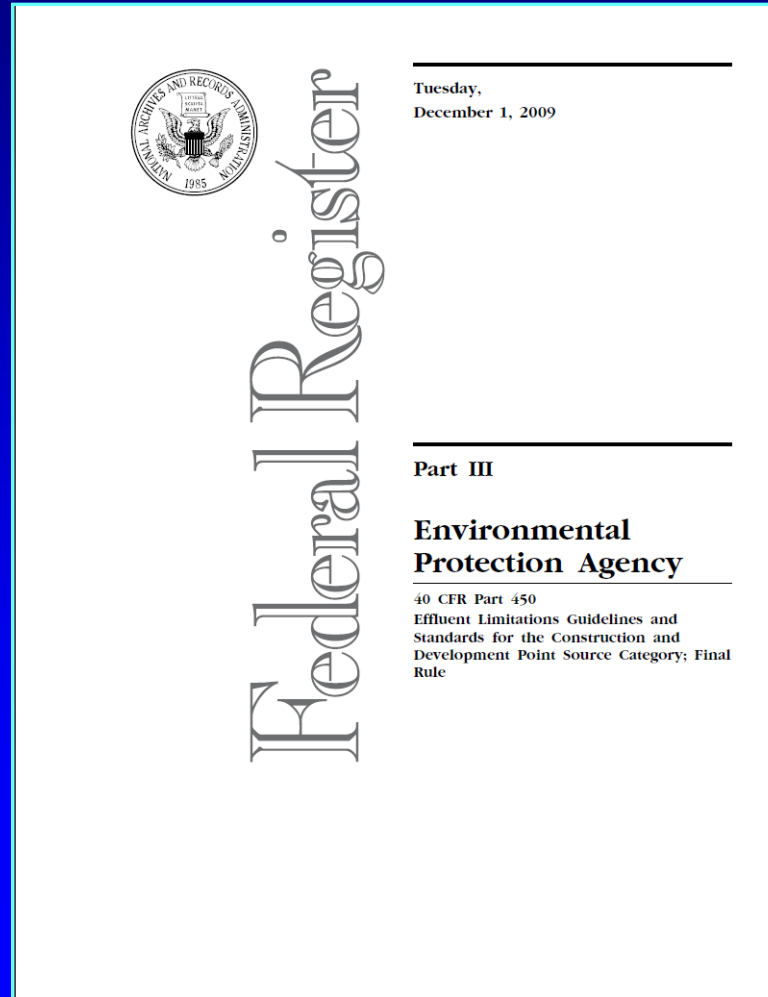
- Section 3.11 deleted
- Recommendations in Technical Document

# Questions?



## 4.0 Performance Criteria for Construction Site SWM

# ELGs for Construction & Development Industry



# 4.0 Construction Site SWM

- Federal Rule (Feb. 1, 2010)
  - Effective on or about August 1, 2011, Numerical Effluent Limit of 280 ntu applies to all construction sites with greater than 20 acres disturbed for all storms less than the 2-YR frequency
  - 20 acre disturbance threshold will roll back to 10 acres effective Feb. 1, 2014

# 4.0 Construction Site SWM

- Proposed Regs
  - Section 4.4.2 Construction site stormwater management BMPs intended to manage areas greater than 10 acres shall have supporting design computations, including but not limited to storage, conveyance, stability, and treatment capabilities.
- Proposed Technical Document
  - Design elements for engineered ESC plan based on bare earth condition for 2-YR storm event.
- Next Construction General Permit (8/11?)
  - EPA ELGs & monitoring requirements

## 4.4 Limits on Land Disturbance

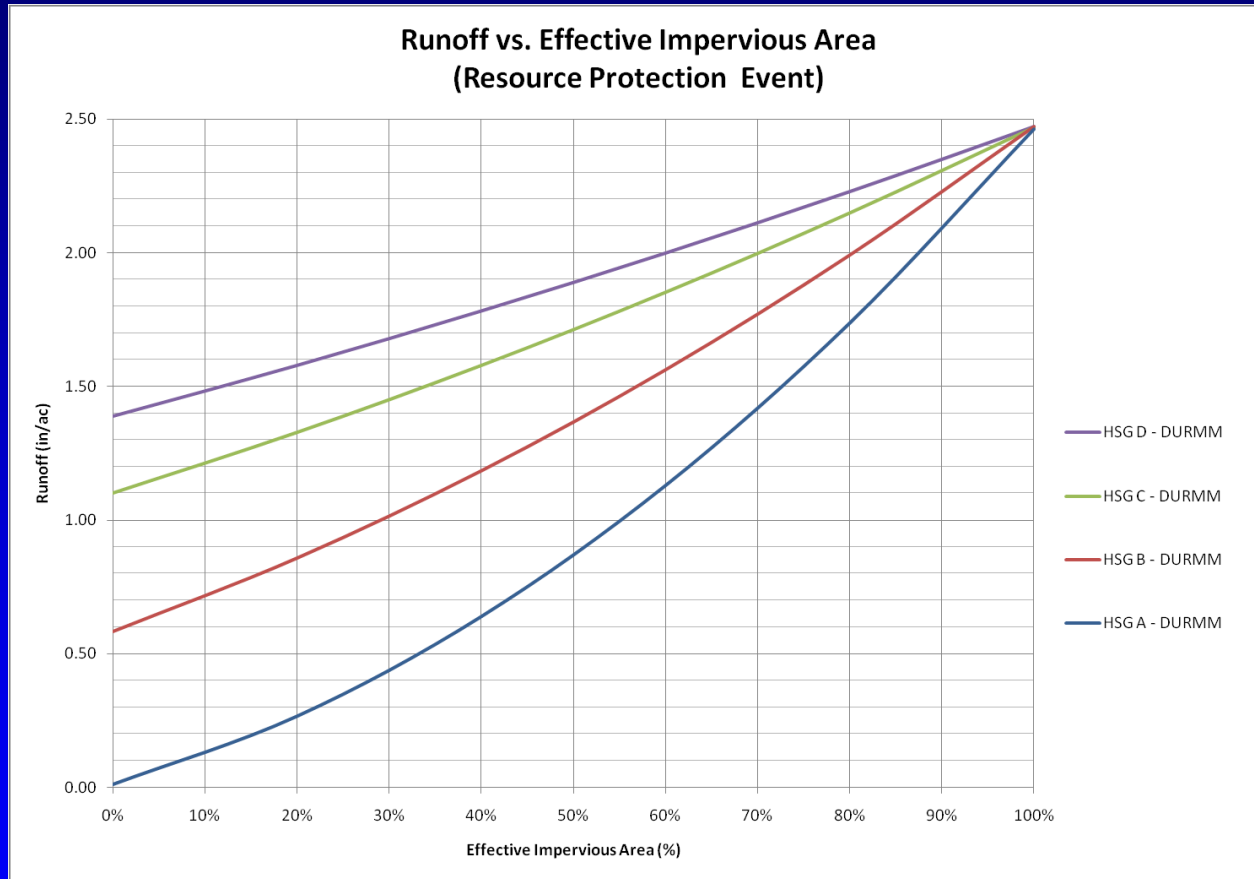
- Section 4.4.2 - areas excluded from LOD removed from reg language
  - Addressed in Technical Document

## 5.0 Performance Criteria for Post-Construction SWM

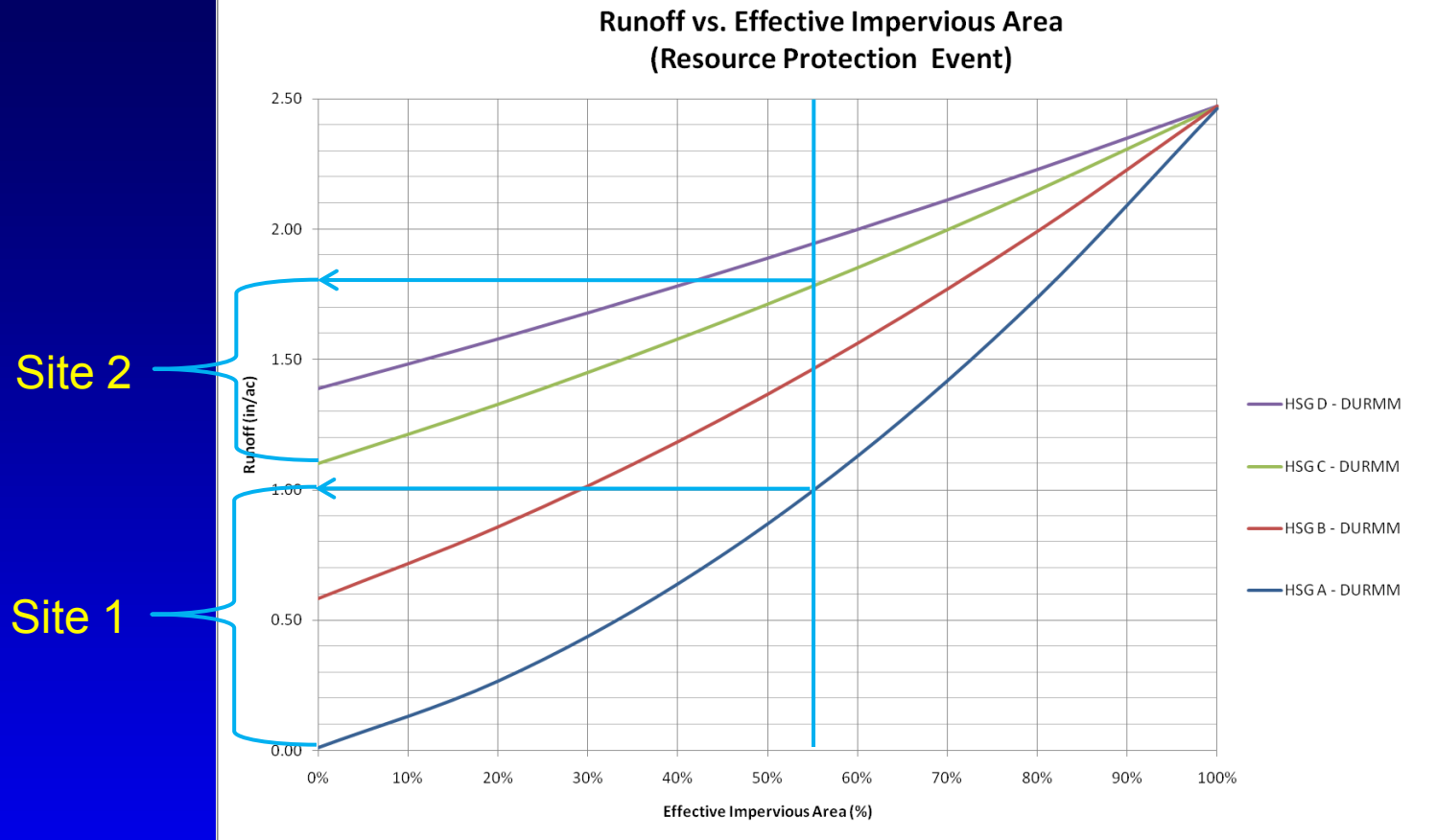
## 5.2 Resource Protection Event Criteria

- Proposed Regs
  - Based on annualized runoff from 1-YR Storm event (~2.7" rainfall)
  - Considered equivalent to the 90<sup>th</sup> percentile **runoff** volume
  - Compliance based on the **effective imperviousness** of the post-developed condition within the **LOD**

# Proposed Minimum RR for New Development



Equivalent 0% Effective Imperviousness in LOD



Site 1: 55% Impervious, HSG A Soil

Runoff = 1.0"

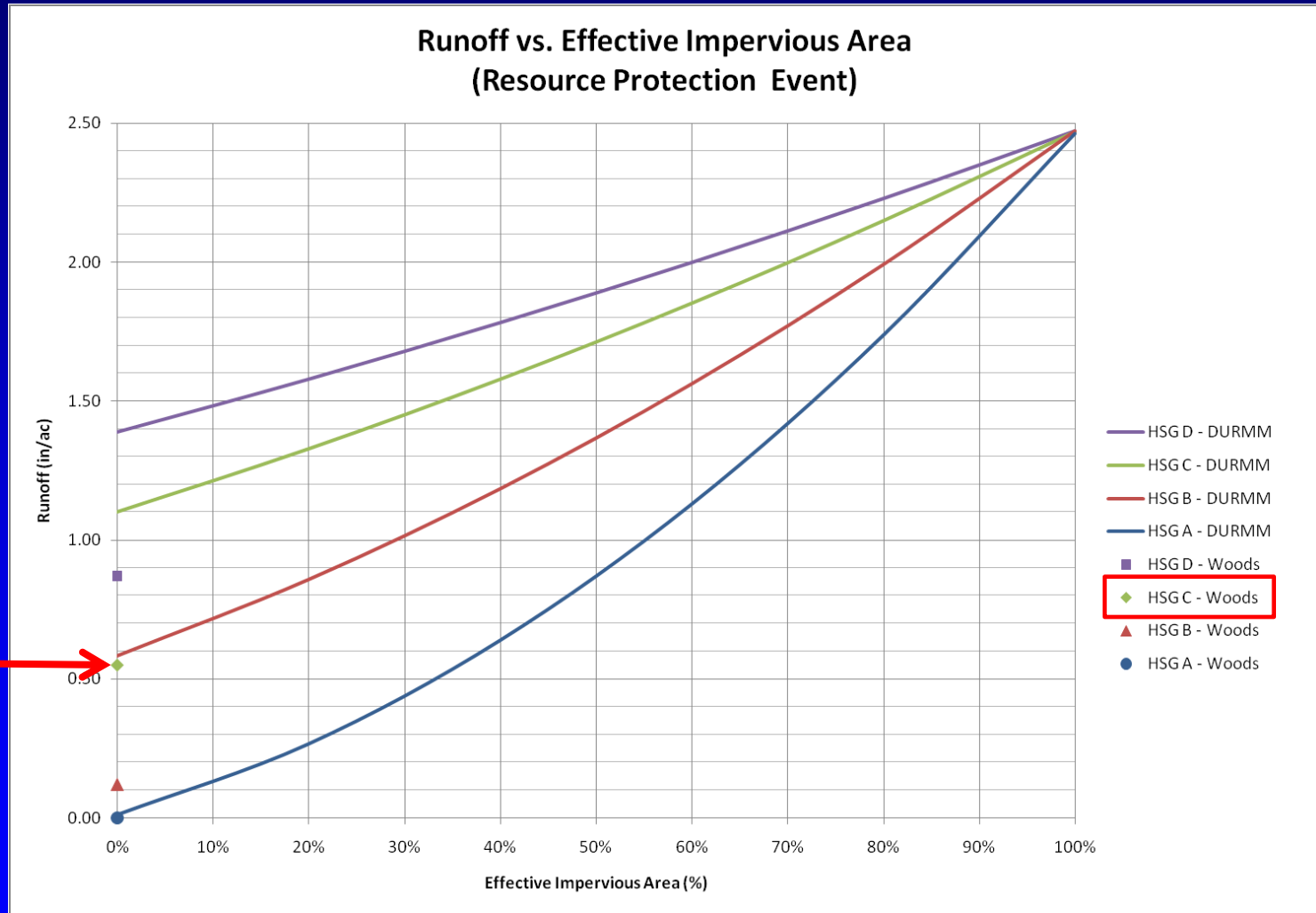
Minimum RR = 1.0" – 0" = 1.0" (100% Reduction)

Site 2: 55% Impervious, HSG C Soil

Runoff 1.8"


Minimum RR = 1.8" – 1.1" = 0.7" (38% Reduction)

# Existing Woods/Meadow in LOD



## 5.2 Resource Protection Event Criteria








- Section 5.2.3.1: Runoff from disturbed areas that were wooded or meadow in the pre-developed condition shall be reduced using runoff reduction practices to an equivalent wooded condition.
- Section 5.2.3.2: All remaining disturbed areas shall employ runoff reduction practices to achieve an equivalent 0% effective imperviousness.



# aka: TMDLs!!!

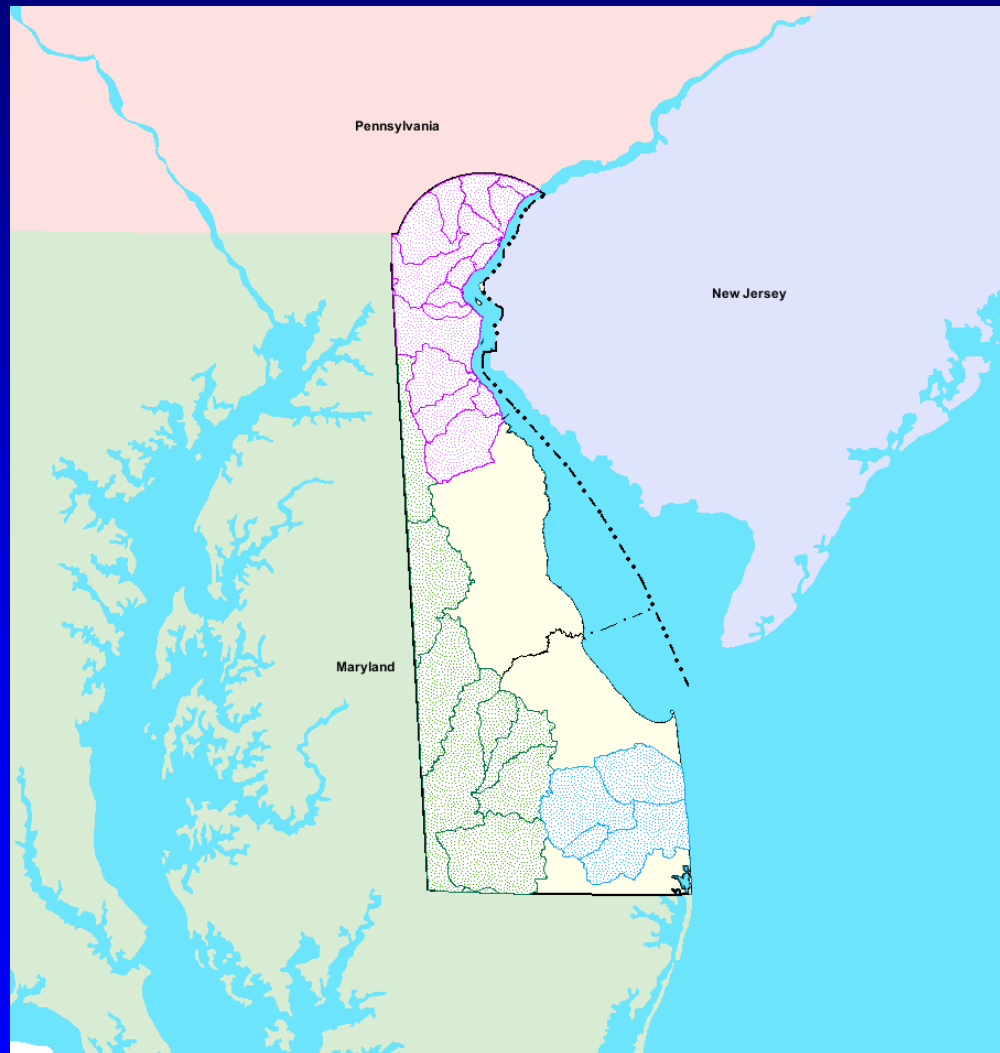
Executive Order 13508  
**Draft Strategy for  
Protecting and Restoring  
the Chesapeake Bay**  
November 9, 2009

Developed by the Federal Leadership Committee for the Chesapeake Bay



start | Inbox - Microsoft Out... | Presentations | Executive Order 135... | Microsoft PowerPoint ... | Proposed National Ru...

# TMDLs



## **Section 5.0 Performance Criteria for Post-Construction Stormwater Management**

- Section 5.2.3.3: Additional water quality treatment BMPs shall be provided if the runoff reduction requirements of Section 5.2.3 are not sufficient to meet Total Maximum Daily Load (TMDL) requirements for the receiving water.

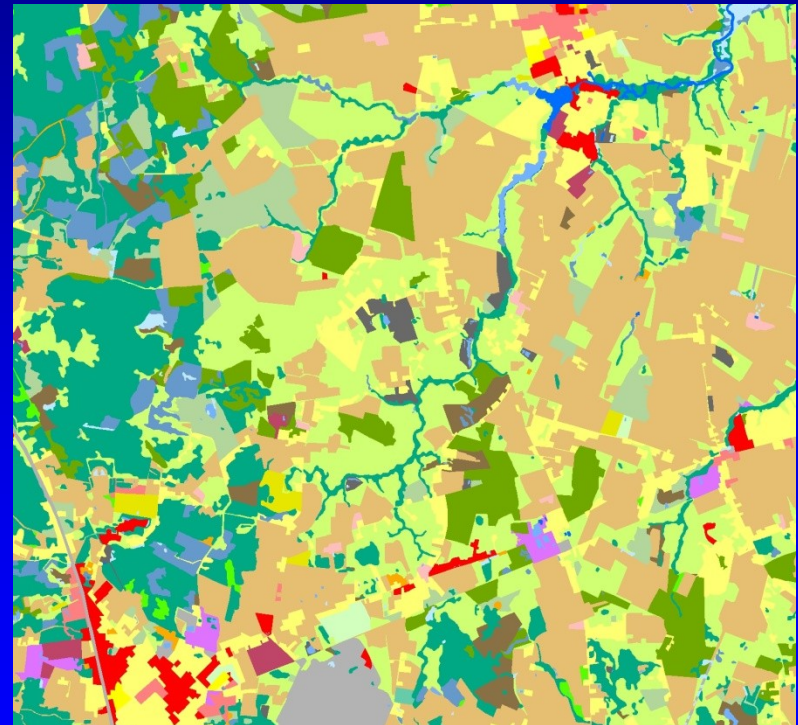
# Min. Reduction Not Feasible?

- Section 5.2.3.4: An **offset** shall be provided for any portion of the R<sub>Pv</sub> that does not meet the minimum reduction requirements or that is not sufficient to meet TMDL requirements.

# 5.3 Conveyance Event Criteria

## 5.4 Flooding Event Criteria

- Option 1
  - Standards-based
    - Unit Discharge
      - Based on 2007 LULC
      - Woodland/Meadow (HSG A)
        - » 10-YR: 0 cfs/ac
        - » 100-YR: 0.25 cfs/ac
      - Woodland/Meadow (HSG B,C,D)
        - » 10-YR: 0.375 cfs/ac
        - » 100-YR: 1.25 cfs/ac
      - Non-Woodland/Non-Meadow
        - » 10-YR: 0.75 cfs/ac
        - » 100-YR: 2.25 cfs/ac



## 5.3 Conveyance Event Criteria

## 5.4 Flooding Event Criteria

- Option 2
  - Performance-based
  - Compliance based on “no adverse impact”
  - Analysis based on 3 increasing levels of detail
    - Level 1
      - Hydrologic modeling only
      - Point of Analysis at site only
      - Analyze post-developed condition only
      - Compliance based on site hydrograph peak compared to overall watershed hydrograph peak

## 5.3 Conveyance Event Criteria

## 5.4 Flooding Event Criteria

- Option 2 (cont.)
  - Level 2
    - Hydrologic modeling + steady flow hydraulic model
    - Point of Analysis at point downstream where site is less than 10% of total watershed
    - Analyze pre- and post-developed conditions
    - “No Adverse Impact”: less than 0.05’ increase in water surface elevations in channels and/or in headwater at hydraulic structures for all points of analysis; the area of inundation shall not encroach upon buildings or similar structures previously not impacted.
  - Level 3
    - Same as Level 2 except use of **unsteady** flow hydraulic model

## 5.3 Conveyance Event Criteria

## 5.4 Flooding Event Criteria

- Option 2 (cont.)
  - If compliance can't be met as above, remedy must be provided
    - Options include over-management, downstream improvements, easements, etc.

## 5.6 Redevelopment, Brownfield, and Infill Criteria

- Proposed Regs
  - Infill considered more like new development, with the understanding that on-lot SWM may be necessary
  - Redevelopment & Brownfields may have reduced runoff reduction requirements

# 5.6 Redevelopment, Brownfield, and Infill Criteria

The screenshot displays the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) website. The browser window title is "Proposed National Rulemaking to Strengthen the Stormwater Program | NPDES | US EPA - Windows Internet Explorer". The address bar shows the URL: <http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm>. The page features a navigation menu on the left with links to Basic Information, Municipal MS4s, Construction Activities, Industrial Activities, Road-Related MS4s, Menu of BMPs, Green Infrastructure, Urban BMP Tool, and Stormwater Home. The main content area is titled "Proposed National Rulemaking to Strengthen the Stormwater Program" and includes a search bar, a list of recent additions, and a list of links. The right sidebar contains a "Stormwater Information" section with links to Recent Additions, FAQs, Publications, Regulations, Training & Meetings, Links, and Contacts. The bottom of the page shows a taskbar with various open applications and a system clock indicating 2:10 PM.

U.S. ENVIRONMENTAL PROTECTION AGENCY

## National Pollutant Discharge Elimination System (NPDES)

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[EPA Home](#) > [QW Home](#) > [QWM Home](#) > [NPDES Home](#) >

NPDES Topics | Alphabetical Index | Glossary | About NPDES

### Proposed National Rulemaking to Strengthen the Stormwater Program

EPA is announcing plans to initiate national rulemaking to establish a program to reduce stormwater discharges from new development and redevelopment and make other regulatory improvements to strengthen its stormwater program. This website provides information on two activities related to this proposed rulemaking:

- [Stakeholder Input on Proposed Rulemaking](#)
- [Information Collection Request \(ICR\) for Proposed Rulemaking](#)

#### Stakeholder Input on Proposed Rulemaking

EPA has issued a [Federal Register Notice \(PDF\)](#) (6 pp, 76K) seeking stakeholder input to help EPA shape a program to reduce stormwater impacts. Input will be provided through both written comments and during a series of public listening sessions. As described in the FR Notice, EPA seeks input on the following preliminary regulatory considerations:

- Expand the area subject to federal stormwater regulations
- Establish specific requirements to control stormwater discharges from new development and redevelopment
- Develop a single set of consistent stormwater requirements for all MS4s
- Require MS4s to address stormwater discharges in areas of existing development through retrofitting the sewer system or drainage area with improved stormwater control measures
- Explore specific stormwater provisions to protect sensitive areas

Written comments must be submitted on or before February 26, 2010 to the address specified in the Federal Register notice.

**(New)** [Boston, MA Listening Session](#) - March 11, 2010, 10:00 am to 3:00 pm at EPA Region 1 Office

A new stormwater listening session has been scheduled for March 2010. EPA invites members of the public to give brief (3 minute) statements regarding stormwater rulemaking considerations including the five areas of preliminary consideration. Written comments may also be submitted in person at the listening session.

In order to provide adequate seating for those wishing to attend EPA's public listening sessions, interested individuals must register to attend by March 8, 2010. For individuals who cannot attend the listening session, EPA will make a conference call line available. The conference line will be "listen only," and sound quality cannot be guaranteed. Please contact [Amber Marriott](#) (amber.marriott@tetratech.com) for the conference call information.

**Please Note:** EPA will **not** be accepting comments (oral or written) on the Draft General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems in Massachusetts North Coastal Watersheds. EPA-Region 1 will hold a separate public hearing for the permit on March 18, 2010. For further information, please contact [Thelma Murphy](#) (murphy.thelma@epa.gov).

**(New)** [EPA has made available a copy of EPA's presentation from the listening sessions \(PDF\)](#) (30 pp, 2.7MB).

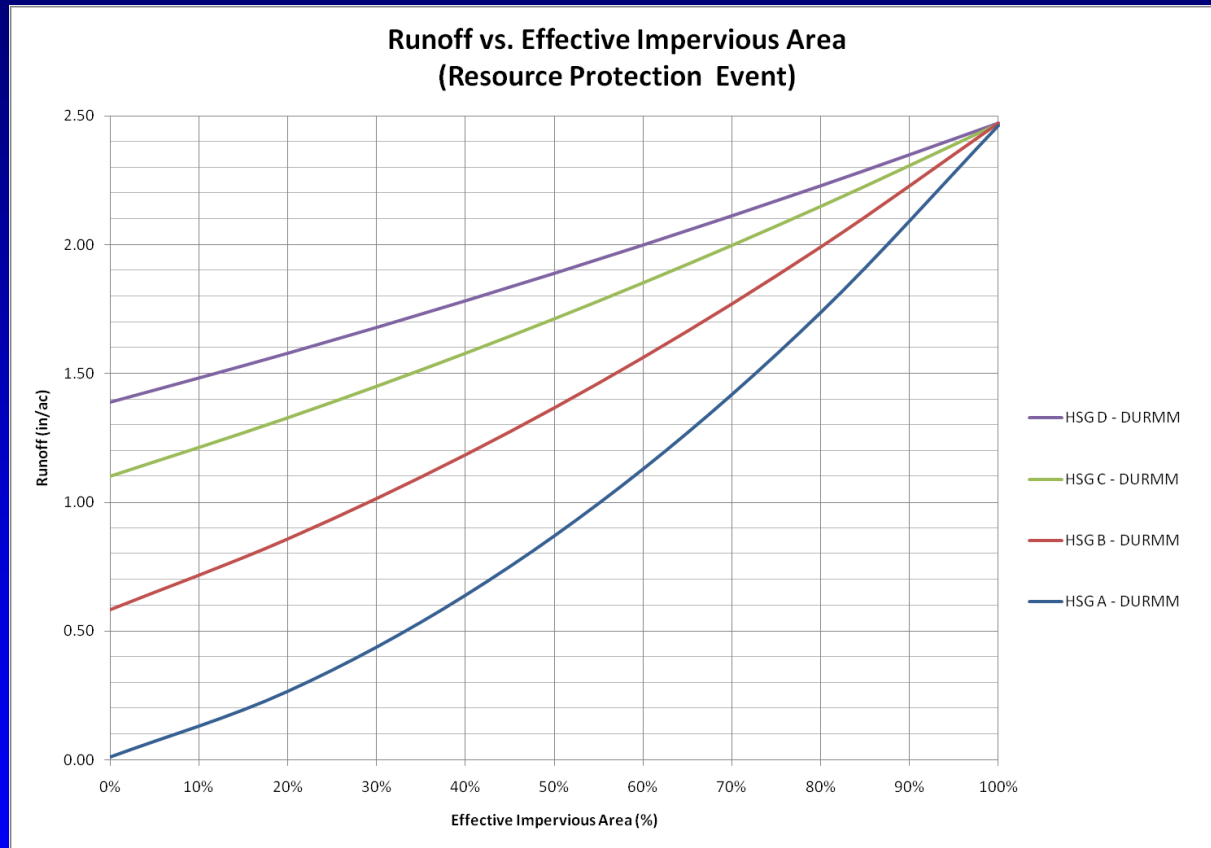
In January 2010, EPA held five public listening sessions to allow the public to provide input on regulatory actions that EPA is considering. Brief oral comments (three minutes or less) were accepted at the sessions.

EPA held a "virtual" listening session as a Webcast on February 3, 2010 from 12:00 pm to 4:00 pm Eastern time. After a presentation from EPA, the Webcast allowed members of the public to call in and give brief (3 minute) statements. Audience members were able to listen to the webcast and all public statements using

Sign Up for NPDES NEWS

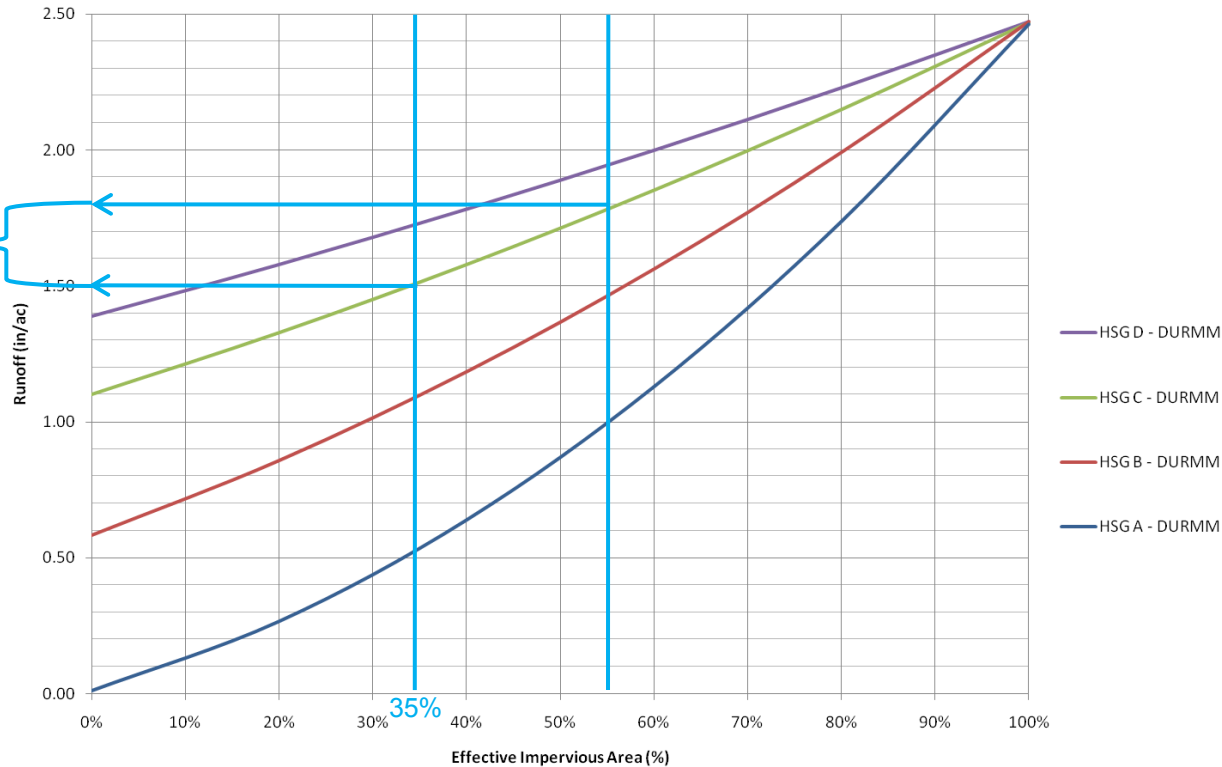
Acrobat Reader  
The documents on this site are best viewed with Acrobat 8.0

# Proposed Minimum RR for Redevelopment



20% Reduction in **Existing Effective** Imperviousness\*

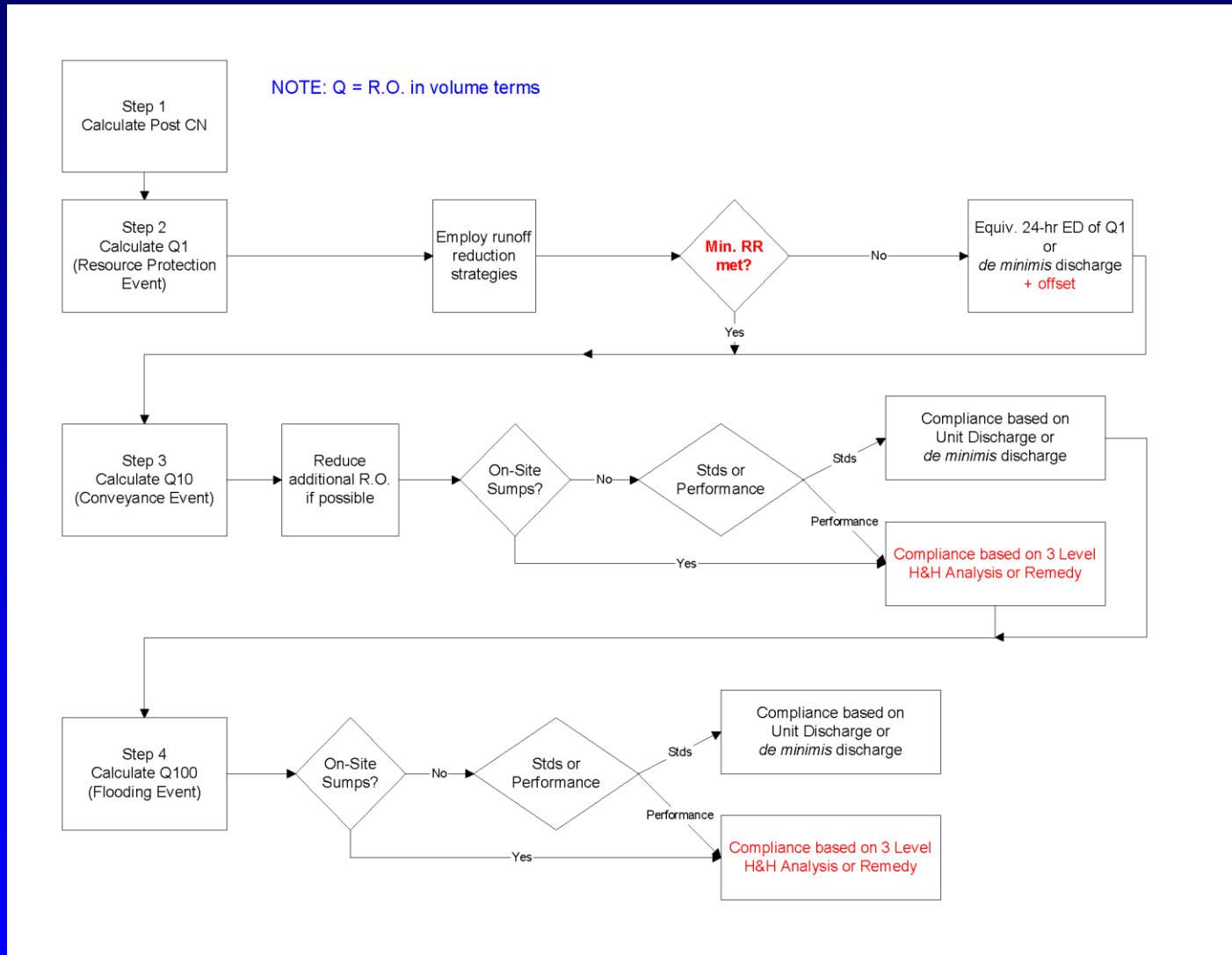
Runoff vs. Effective Impervious Area  
(Resource Protection Event)



Redev.  
Site 2

Redev. Site 2: 55% Ex. Impervious, HSG C Soil, 55% Prop. Impervious  
 Runoff = 1.8"  
 Req'd Reduction in Effective Impervious = 55% - 20% = 35%  
 Minimum RR = 1.8" - 1.5" = 0.3" (17% Reduction)

# 5.0 Performance Criteria for Post-Construction SWM



## 5.0 Performance Criteria for Post-Construction SWM

- Issues to be resolved
  - “de minimis discharge”
  - Offsets for RPs

# Questions?



## 6.0 Construction Review of Sediment & Stormwater Management Plan

# Construction Review

- Minor changes to reg language
  - “inspection” → “review”

## 6.1.6 Owner's Responsibility to Hire A CCR

- Projects 20 acres or greater
- Projects requiring discharge monitoring
- State and Federal Projects
- As required on a case-by-case basis

## 6.3 CCR Requirements

- Enforcement – three levels
  - Probation
    - DNREC evaluate performance
    - CCR continues activities
  - Suspension
  - Revocation

## 6.5.6 Notice of Completion

- All items and conditions of plan satisfied
- Post construction verification documents
- Operation and Maintenance Plan
- Final Stabilization

# 7.0 Post Construction Maintenance of Permanent Stormwater Management Systems

# 7.1 Maintenance Responsibility

- Owner responsible for maintenance
  - Transfers with a legal transfer of ownership and prior notice to Dept. or Delegated Agency
  - SWM system shall “run with the land”
  - Offer SWM system for dedication

## 7.2 Owner Responsibilities

- Ensure proper function, maintain, repair & restore SWM system
- Conduct regular maintenance reviews
- Changes require approval
- Submit scope of work prior to maintenance
- Maintenance responsibility may be shared through a legal agreement
- SWM measures in Tax Ditch ROW requires agreement with Tax Ditch organization

## 7.3 Maintenance Reviews

- Conducted by
  - Department
  - Delegated Agency
  - Duly authorized agent
- Document maintenance needs
- Specify timeframe for completion

# 8.0 Enforcement and Penalties

- No significant language changes to regulations
- Technical document will outline process

# 9.0 Delegation of Program Elements

- 9.7 Alternative requirements
  - More stringent than regulations
  - Established through local ordinance or statutes, or
  - Departmental approval following public notice
- 9.8 Cooperative Agreement for program implementation requires Departmental concurrence

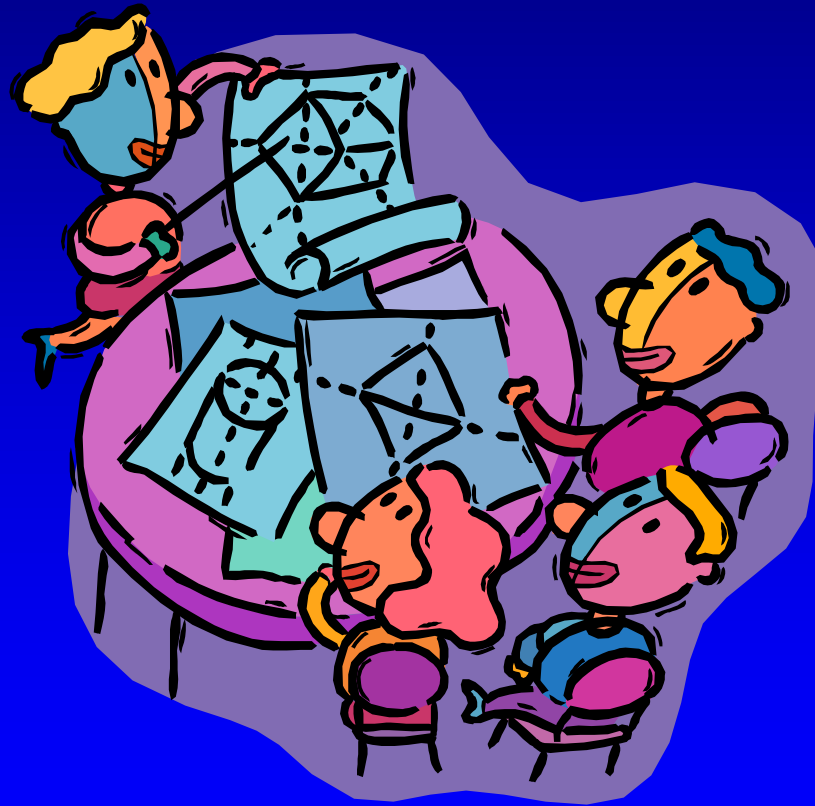
# 10.0 Criteria for Implementation of a Stormwater Utility

- Streamlined regulation language
- Allows local governments to develop stormwater utilities that work for them

# Questions?



# *Discussion*



# Timeline – 3rd Quarter 2010

- Legal Review
- Outreach to selected regulated groups
- Technical Document
- Public Workshops

# Timeline – 4<sup>th</sup> Quarter 2010

- Address Workshop comments
- Public Hearing
- Register of Regulations
  - January – February 2011

# Regulatory Flexibility Act

- Established in Title 29 Chapter 104 DelC.  
...regulatory and reporting requirements fit the scale of those being regulated especially individuals and small businesses.
- H.B. 390 currently being debated to amend this regulation.

# Focus

## Group Discussions

- Municipalities
- Environmental Groups
- Homebuilders Association, Contractors
- Engineers, Consultants, Business Groups
- Developers of Infill and Redevelopment
- Stormwater Delegated Agencies
- Legislators